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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
		TANAKA	A 235648

EXAMINER

IM41/0914

WISHMAN
PROPERTY GROUP OF PILLSBURY
1100 NEW YORK AVE NW
WASHINGTON, DC 20005-0918

TUNING	PAPER NUMBER
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1744

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DATE MAILED: 09/14/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 8-13-98

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 12-15, 21-37 is/are pending in the application.
Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☒ Claim(s) 12-14, 27-30 is/are allowed.
- ☒ Claim(s) 15, 21-26, 31-37 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☐ Notice of Reference Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

BEST AVAILABLE COPY

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as the specification does not provide support for the invention now claimed.

Claims 1, 6, 12, 16 now include the situation where the high-emissivity layer is on the internal surface of the sensor element or is the internal electrode or a part thereof, and yet is separated from the internal electrode by a clearance. It is unclear what basis exists for this in the original disclosure. In fact, it is not evident how this is accomplished when the high-emissivity layer is either on or part of the internal electrode and the internal electrode is on the internal surface of the sensor. It appears that the only way such a clearance can exist is for the high-emissivity layer to be on the heater. If that is so, it makes no sense to specify a porosity for this high-emissivity layer (penultimate paragraph of claim 1), since the gas does not need to contact the heater. Incidentally, the

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basis for the language of the penultimate paragraph of claim 1 is unclear.

Further, it is not evident where is the basis for new claims 18 and 19. Page 10, line 9 of the specification sets forth a thickness of 20 microns, but where does the range of 5-20 microns come from? Similarly, page 9, line 2 discloses 50% porosity. Where is the basis for at least 10% porosity?

Also, the expression "the heater being made of non-oxide type ceramic" (claim 9, line 6) appears to have no support in the original disclosure. The fact some disclosed heater materials are of non-oxides is not sufficient basis for this expression.

Further, it is unclear where is support for SiC as a heater material (claim 9, last line). The first full paragraph on page 3 of the specification alludes to SiC as a suitable high-emissivity layer material on the heater, but does not appear to teach SiC as heater material.

In any future amendments, applicant is called upon to point to the specification by page and line or to an original claim where basis exists for such amendments.

Claims 1-19 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

Claims 1-19 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point

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out and distinctly claim the subject matter which applicant regards as the invention.

As discussed before, it is unclear how the high-emissivity layer can be on or a part of the internal electrode and yet be separated therefrom by a clearance, as called for by claims 1, 6, 12, 16.

Claim 9, line 6, "type" is vague.

Claim 11, line 2 does not read correctly.

Claim 6, lines 10-11; claim 12, lines 11-12; claim 16, lines 12-13, "the high-emissivity layer" has no antecedent basis.

Claims 12, 16, "high emissivity" without numerical limits is vague.

Claim 16, line 7, "said surface..." has no antecedent basis.

Claims 1-5, 9-11, 18, 19 are rejected under 35 U.S.C. § 103 as being unpatentable over Sakurai et al in view of Agarwal et al.

Applicant argues that Agarwal shows the sensor surrounded by the heater, whereas Sakurai and applicant disposes the heater inside the sensor.

This argument is not persuasive. Agarwal is only relied on to show that heaters are conventionally of polygonal shape and made of nitrides and carbides. Whether the heater is located inside or outside of the sensor really has no bearing on its shape and material. Note that Sakurai already shows locating the heater within the sensor.

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The other rejections based on prior art have been dropped because of the limitation calling for the high-emissivity layer to be on or a part of the internal electrode and yet be separated therefrom by a clearance. If this limitation is permitted to be removed by a future response, these rejections may be reinstated without withdrawing the finality of the rejection.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ta Tung whose telephone number is (703) 308-3329. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

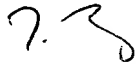
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Kathryn Gorgos, can be reached on (703) 308-3328. The fax phone number for this Group is (703) 305-3600.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.


Ta Tung
Primary Examiner
Art Unit 1102

Ta Tung
October 9, 1996